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(3270)

Madison Gas and Electric Company
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your community energy company

April 29, 2003

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Electric Division

Ms. Lynda L. Dorr
Secretary to the Commission
Public Service Commission of Wisconsin
610 North Whitney Way
Post Office Box 7854
Madison, Wisconsin 53707-7854

Subject: PSC 113.0604 Annual Reliability Report

Dear Ms. Dorr:

Enclosed please find one hard copy and one PDF copy of the annual reliability report required under PSC Chapter 113, Section .0604.

Thank you,

David B. Blankenheim
Director - Operations Support

slm

Enclosures

Madison Gas and Electric Company
Annual Report PSC 113.0604
April 2003

PSC 113.0604 (1)
The names of Madison Gas and Electric Company's (MGE) distribution feeders incorporate the name of the substation they originate from and the voltage of the feeder. Feeders from 13.8-kV substations are given numbers in the form "13xx" while names of feeders from 4-kV substations are in the form "4xx." For example, SYC 1310 is a 13.8-kV feeder from the Sycamore substation and BLK 451 is a 4-kV feeder from the Blackhawk substation.

PSC 113.0604 (2)(a)
MGE operates in a single area in Dane County for the electric distribution system. The chart below shows our SAIFI, SAIDI, and CAIDI statistics for 2002.

Year	Customers	Customers Out	Customer Minutes	SAIFI	SAIDI (minutes)	CAIDI (minutes)
2000	125217	147930	12962600	1.18	103.50	87.60
2001	126983	105962	8707004	.834	68.56	82.17
2002	128590	149696	11405443	1.16	88.69	76.19

PSC 113.0604 (2)(b), (c)
The MGE distribution circuits that are highest priority, based on SAIFI and momentary events (ME) in 2002, are shown in the table below. MGE selects the circuits with the highest SAIFI starting at the highest and moving down until a gap occurs in the SAIFI values near ten circuits. In addition, MGE selects circuits based on the number of MEs experienced starting with the highest and moving down until a gap occurs in the ME totals. The circuits are ranked based on the sum of SAIFI and ME count. Some circuits may fit both categories. MGE is required to list ten of its worst-performing circuits but has listed 16 when considering SAIFI and ME.

MGE uses SAIFI and ME to identify circuits that are likely to need reliability improvements and places less emphasis on SAIDI and CAIDI. This is because when customers experience an interruption of any duration, most of the inconvenience is present whether the interruption is very short, as in a momentary, or somewhat longer. Very long outage durations are unusual, so focusing on minimizing interruptions offers the greatest benefit to customer satisfaction.

The SAIDI and CAIDI indices (outage duration) are highest during storm situations and are often related to the logistics of responding to widespread outages, so they are less useful in identifying areas of lower reliability. High CAIDI can also be associated with cable failures due to the time-consuming work of locating and repairing failed cables. MGE is aggressively replacing cables that are reaching 30 years of age or exhibit a history of failures. This work is not being done on a circuit-by-circuit basis because cable age and history do not depend on circuit boundaries.

Worst Performing Circuit Analysis for 2002

Rank	Circuit	SAIFI	Five-Minute Momentaries*	Total
1	FCH 1315	1.3	12	13.3
2	NSP 1319	1.2	9	10.2
3	SYC 1334	1.1	9	10.1
4	FCH 1316	3.6	5	8.6
5	SYC 1312	2.0	6	8.0
6	SPR 1312	4.9	3	7.9
7	BLK 1336	1.7	6	7.7
8	CSP 1336	1.5	6	7.5
9	HKP 1310	.3	7	7.3
10	WGA 1319	0.1	7	7.1
11	WTN 1320	3.0	3	6.0
12	FPT 433	3.3	2	5.3
13	FCH 1317	3.2	1	4.2
14	GLY 432	3.0	1	4.0
15	WGA 1318	3.0	1	4.0
16	NIC 443	3.1	0	3.1

*Five-minute momentary refers to momentary interruptions occurring within 5 minutes. This may include more than one recloser cycle.

FCH 1315 SAIFI: 1.3, ME: 12
This circuit experienced a high number of momentary interruptions in 2002. Three of the momentaries for this circuit were related to faults from cable failures that subsequently resulted in partial outages of the circuit. Four of the momentaries seem to be related to storm issues. The three remaining momentaries had no related cause.

We will review the grounding in this area, and lightning protection will be reviewed in 2003.

NSP 1319 SAIFI: 1.2, ME: 9
This circuit had a high number of momentary operations in 2002. This circuit also appeared in the 2002 report due to high momentary interruption activity in 2001.

Fault indicators are being installed in the spring of 2003 at five strategic locations to assist in diagnosing the causes of these momentary disturbances. Tree trimming was completed in 2001.

SYC 1334 SAIFI: 1.1, ME: 9
This circuit experienced a high number of momentary interruptions in 2002. It branches east and west from the substation with a recloser on each branch. Four of the momentaries for this circuit were related to faults from underground cable failures that subsequently resulted in partial outages of the circuit. The remaining three momentaries had no identified cause.

The coordination of the feeder breaker and downstream reclosers has been adjusted to reduce the number of operations seen in these cases. No additional changes or system improvements are needed for this circuit.

FCH 1316 SAIFI: 3.6, ME: 5
This circuit experienced three total circuit outages, once due to wildlife, once due to the Fitchburg substation transformer breaker tripping on overload, and once due to a cable fault on the feeder trunk. Storms (lightning) and other cable failures caused most of the remaining outages.

Wildlife protection was installed in this substation in November 2002. The faulted cable on the main trunk has been replaced. The transformer overload occurred during a maintenance operation where the adjacent transformer was out of service and load was unexpectedly high. Both transformers are in service, and future maintenance is planned to be scheduled for lower load periods.

No additional modifications or improvements are needed for this circuit.

SYC 1312 SAIFI: 2.0, ME: 6
This circuit had a high number of momentary interruptions primarily caused by wildlife.

Wildlife protection will be installed in the substation and along vulnerable overhead areas in 2003.

SPR 1312 SAIFI: 4.9, ME: 3
This circuit experienced four total circuit outages in 2002. Two total circuit outages were related to breaker mechanical problems. One was due to a storm and the other was due to a vehicle collision.

Repairs were made to the breaker in 2002. In addition, experience indicates that review of lightning protection along Buckeye Road is warranted in 2003.

BLK 1336 SAIFI: 1.7, ME: 6
This circuit had a high number of momentary interruptions but no apparent recurring cause.

Fault indicators will be installed on the feeder in 2003 to assist in diagnosing momentary disturbances.

CSP 1336 SAIFI: 1.5, ME: 6
This circuit experienced a high number of momentary interruptions primarily attributed to diverse causes.

The system protection operated as designed, and there is no need for additional improvements on this circuit.

HKP 1310 SAIFI: 0.3, ME: 7
This circuit experienced a high number of momentary interruptions with only two of the momentaries being attributed to small service outages.

Fault indicators will be installed on this feeder in 2003 to assist in diagnosing the causes of the momentary disturbances.

WGA 1319 SAIFI: 0.1, ME: 7
This circuit experienced a high number of momentary interruptions. Three of the momentaries were caused by primary cable faults. The remainder had no identified causes.

Job orders have been issued to replace the cable in the affected areas. We will monitor this circuit after an ongoing rebuild of the substation to determine if additional work is warranted.

WTN 1320 SAIFI: 3.0, ME: 3
The WTN 1320 circuit experienced three total circuit outages in 2002. Two of the circuit outages were caused when the WTN 1320 breaker did not attempt to reclose for a fault on the circuit. The other total circuit outage was caused by a fault on an adjacent West Towne substation circuit (WTN 1318) causing a transformer differential relay to operate.

The reclosing relay on the WTN 1320 breaker was replaced in 2002. Adjustments have been made to the relay settings on both West Towne substation transformers. No additional modifications or improvements are planned for this circuit.

FPT 433 SAIFI: 3.3, ME: 2
This circuit experienced three total circuit outages due to outages on its parent circuit, FCH 1314. The remainder of the outages were smaller and due to diverse causes.

Since experience does not indicate the presence of a systemic problem, no modifications or improvements are planned for this circuit.

FCH 1317 SAIFI: 3.2, ME: 1
This circuit experienced three total circuit outages, once due to the Fitchburg substation transformer breaker tripping on overload, once due to trees in a manner that would not be responsive to trimming, and once due to trees where trimming may be useful. Cable failures, wildlife, and a dig-in caused most of the remainder of the outages.

Wildlife protection was installed in this substation in November 2002. Routine trimming was completed in 2002. No other modifications or improvements are needed for this circuit.

GLY 432 SAIFI: 3.0, ME: 1
This circuit experienced three total circuit outages due to outages on the FCH 1314 parent circuit. The remainder of the outages were due to diverse causes.

Since experience does not indicate the presence of a systemic problem, no modifications or improvements are planned for this circuit.

WGA 1318 SAIFI: 3.0, ME: 1
This circuit experienced three total circuit outages in 2002. Two of these outages occurred as a result of a malfunctioning overcurrent relay on an adjacent feeder. The third total circuit outage was the result of a cable failure and miscoordination between the feeder breaker and a downstream device.

The malfunctioning overcurrent relay has been replaced and the coordination corrected. In addition, the Wingra substation is in the process of being upgraded in 2003. The transformer high-side fuses will be replaced with a breaker, and the coordination of the feeder breakers will be further reviewed.

NIC 443 SAIFI: 3.1, ME: 0
This circuit experienced three total circuit outages in 2002. The parent circuit caused two of the outages, and one circuit outage was caused by a fault on the 4-kV aerial cable.

The replacement of the aerial cable will be considered as part of the conversion project and in conjunction with a planned city beautification project. There is a 4/14-kV conversion planned for the area in 2004.

PSC 113.0604 (2)(d) - Status of Response Plans Filed in the 2002 Report

WGA 1315
This circuit experienced momentaries that seem to be attributable to storm issues.

Work to install additional lightning arresters is being performed in 2003 to coincide with a line reconductoring project.

ICR 435
This circuit experienced three outages.

Because the outages did not display a pattern suggesting a particular course of action and a failed riser was replaced in 2001, there was no additional work planned for this circuit.

WPT 1332
This is primarily a rural circuit and was noted in previous reports. MGE developed a plan to make multiyear improvements on this circuit.

In 2001, MGE surveyed the southern portions of the circuit including testing grounds, improving lightning arrester applications, and aggressively correcting small problems found on this circuit. Additional improvements to arrestering and grounding have been completed in the past year. Tree trimming status was reviewed in 2002. A substantial portion of this circuit will be rebuilt in 2003 due to the Highway 12 expansion. In addition to the inherent improvements a rebuild will provide, MGE will review siting of reclosers and other protective equipment as a part of the rebuild project.

HKP 1307
This circuit experienced a high momentary count in early 2001. One span of primary was susceptible to galloping and had multiple contacts during a major wind event.

Undergrounding of one span of primary and installation of additional lightning arresters and grounding was completed in 2000 and 2001 as reported in the 2002 report.

RYS 1312
This circuit experienced momentaries that seem to be attributable to storm issues. MGE performed routine tree trimming in 2001 and plans additional trimming in 2002. We will install additional lightning arresters and grounding and additional fault indication devices to pinpoint problem areas.

MGE performed planned tree trimming in 2001 and 2002. Planned additional arresters and grounds are presently being engineered for construction in 2003.

WMD 1333
This circuit also experienced momentaries that seem to be attributable to storms and lightning. MGE performed routine tree trimming in 2001. We will improve grounding and lightning arresters and install fault indication devices to assist with identifying problem areas.

Planned lighting arrester additions have been completed. Additional fault indicators have been installed to help identify causes of temporary faults.

NSP 1319
The circuit experienced two total outages in 2001. One was due to an equipment failure in the substation and the other due to vehicular contact with the line. A common cause was not identified for the ME on this circuit.

Additional fault indicators have been installed to assist in diagnosing the cause of temporary faults.

WLT 1322
This circuit experienced three total circuit outages in 2001. Routine tree trimming was performed in this area in 2001. In addition, some overhead line sections that were in marginal condition were rebuilt in 2001.

As reported in 2002, repairs to this circuit have been completed. We will continue to monitor this circuit to assure the completed repairs are effective.

WMD 1332
This circuit also experienced a high SAIFI due to substation coordination issues similar to WMD 1334 (see next entry). The substation issues were resolved in 2001. No additional work is planned in 2002.

No additional repairs were required for 2002.

WMD 1334
This rural circuit experienced three total circuit outages plus a number of smaller outages. The three total circuit outages were related to substation relay problems. MGE improved instrumentation in the substation to correct these in 2001. The partial outages were primarily related to cable failures and storm (lightning) issues. We will monitor this circuit to verify the improvements to this circuit are effective.

As reported in 2002, repairs to this circuit have been completed. We will continue to monitor this circuit to assure the completed repairs are effective.

NSP 1317
There were two near-total circuit outages through the same wooded residential area.

Tree trimming was performed in 2002 and early 2003. Adjustments to the fusing scheme were implemented in 2002.

WLT 1321
This circuit is built as double circuit with WLT 1322 (see previous entry). This circuit extends through a heavily wooded area. Tree trimming was performed in this area in 2001.

As reported in 2002, repairs to this circuit have been completed. We will continue to monitor this circuit to assure the completed repairs are effective.

MON 443
Routine tree trimming was performed throughout this area in late 2001. All cap and pin-type insulators in the supplying 14-kV substation have been replaced. Lightning protection will also be reviewed for this circuit.

Lightning protection improvements were completed in late 2002 and early 2003.

ETN 1336
This circuit experienced two total circuit outages in 2001. Both outages were due to contractor dig-ins on a feeder line. No additional maintenance activity is proposed for 2002.

No additional repairs were required for 2002.

SHW 432
This circuit experienced three total circuit outages due to outages on its parent circuit, WLT 1322. Routine tree trimming was performed on this circuit in 2001.

No additional repairs were required for 2002.

BLT 1306
This circuit experienced three total circuit outages in 2001. These outages were a result of animal contact in a transformer enclosure. After these incidents, the enclosure was rebuilt making it animal proof. In addition, we plan to modify this enclosure further by installing "dead front" network transformers in 2002.

This work will be completed in 2003 to allow coordination with the business of customers served by this transformer.

PSC 113.0604 (2)(d) - Status of Response Plans Filed in Previous Reports

This section will report on any improvements outstanding from previous reports.

MID 451 (From 2001 Report)

MGE trimmed trees in the entire circuit area in 2001 as part of our normal tree trimming program. The contemplated conversion to 13.8-kV distribution has been eliminated; however, we are installing a second transformer at this site. A second transformer will reduce the exposure for these customers by splitting this circuit into two smaller circuits.

The second transformer was installed in 2002.

PSC 113.0604 (2)(e) - New or Modified Power Quality or Reliability Programs

Additional reliability plans.

MGE has created a program to replace 69-kV silicon carbide-type lightning arresters with more reliable zinc oxide-type lightning arresters in substations. Lightning arresters were replaced on eight substation transformers in 2001. Work was also done on eight additional transformers in 2002.

We have an ongoing program to improve the wildlife protection in our substations. As the circuit-by-circuit analysis has shown, we have been improving wildlife protection on substations across the service territory where experience indicates significant wildlife activity. Additionally, when a substation is expanded, the wildlife protection for the entire substation is upgraded.

MGE is currently conducting a comprehensive review of the protection coordination in our substations. The review, initiated due to increasing available fault current levels, will examine coordination from the substation transformer high-side device through the distribution feeder breakers.

In addition to the above circuit-by-circuit remedies, MGE continued an aggressive program of replacing aging underground distribution cables. Reactive cable replacements are prioritized based on the number of failures experienced and the number of customers affected by the candidate cable. Cable replaced in 2002 was selected based on our experience of cable failures in recent years.

We are also working to replace URD cable that is more than 30 years old. This proactive cable replacement program is directed at changing out cable that is approaching the end of its useful life prior to failure.

Cable replacement projects will show in the line miles rebuilt section of this report.

PSC 113.0604 (2)(f) - MGE Electric Distribution Long-Range Plan

Overview

The present plans for improvements to the MGE electric distribution system are primarily based on analysis of future facility loads, voltages, and expected customer use. However, distribution improvements are also planned to increase reliability in specific areas and to replace facilities that are at the end of their practical service life. The results of the analysis are proposed projects and facilities in the MGE ten-year electric distribution plan. These plans are updated annually. See Table A and Table B for lists of the projects and facilities for substations and feeders that are proposed over the next ten years.

The MGE electric distribution system is comprised of 4-kV facilities and 14-kV facilities. As of the end of 2002, the 4-kV facilities consisted of 30 substations and 73 feeders and the 14-kV facilities consisted of 23 substations and 122 feeders with 7 of these substations having both 4-kV and 14-kV feeders out of them. (In Cross Plains, the facilities are 12.4 kV and are included in the 14-kV totals above.) Most of the 4-kV substations are served by 14-kV feeders, but five of them are served by 69-kV sources.

Substations

Substation projects include plans to add new substations, add new substation transformers, remove 4-kV substations, and upgrade substation equipment.

To increase reliability, several projects are planned. The Blount substation (4-kV and 14-kV portions) is being rebuilt and upgraded to reduce the frequency and duration of outages caused by age and deterioration as part of a multiyear project that is planned to be completed in 2005. The Wingra substation will be upgraded in conjunction with the replacement of a 69/14-kV transformer in 2003. The addition of two new substations (Martinsville-2005, West Cross Plains-2005) would reconfigure feeders to be shorter and thereby improve reliability by reducing exposure. New metal-clad substation switchgear (Royster-2005) would replace facilities that are now subject to the hazards of weather and wildlife. New capacitor banks are planned for installation at various locations each year to maintain adequate voltage.

In the near term, two new substations are being added (Tokay 69/14-kV approved 2004, Southeast Fitchburg-138/14-kV planned 2005) to alleviate heavy loads that other transformers would have under contingency conditions. In 2003, two new 14/4-kV transformers are being added at Blount substation as part of a project to increase reliability. A portion of the Randall substation is reaching the end of its service life and will be removed in 2003.

In the midterm, new substation transformer capacity is planned to be added (replacement of the two units at Femrite with larger units, a second unit at Sprecher, and a third unit at East Campus). The 4-kV to 14-kV feeder conversions will make 14/4-kV transformers available that will be used to replace older units as necessary. These proposed projects are to alleviate heavy loads on substation transformers during peak customer use and contingency conditions.

In the long term, a new Hanson Road substation is planned on the northeast side of Madison and a new South Nine Springs substation on the southeast side of Madison. Beyond 2007, new substation transformer capacity is planned to be added at several locations (Blackhawk, Fitchburg, and Tokay). In that same time frame, a substation transformer is planned to be replaced at West Middleton with a larger unit.

As 4-kV to 14-kV feeder conversions occur and eliminate the need for 14/4-kV or 69/4-kV transformers and substations, those substations will be removed.

The proposed substation projects planned during the next ten years are shown in Table A.

Feeders

Improvements to feeders include plans for 4-kV to 14-kV feeder conversions and new 14-kV feeders. Plans to rebuild 14-kV feeders are folded into feeder reconfigurations for new substations, 4-kV to 14-kV feeder conversions, and projects specifically designed to address age/condition of the feeders. MGE analyzes the age/condition of its distribution poles on a ten-year cycle, the results of which are incorporated into a pole replacement program.

The 4-kV to 14-kV feeder conversions are a large portion of the feeder projects spread over a number of years. The need for voltage conversions vary and can be because of loads, voltages, age/condition of 14/4-kV transformers, age/condition of poles/wires, or the need to vacate substation space for 69/14-kV transformer additions.

Load growth is another major reason for feeder projects. Such projects are to serve new loads throughout the MGE service territory, to tie feeders at new locations to allow better switching during contingencies, or to reconfigure the feeders because of new substations.

Several projects are proposed to increase reliability. A significant portion of the MGE electric distribution is underground cable, an increasing portion of which is reaching the end of its service life and is being replaced. Feeders will be reconductored or converted from overhead to underground by 2004 to improve their performance (West Middleton to Airport Road, Anderson Road, Fitchburg-Wingra, and Sycamore-East Towne high-voltage distribution). Blount feeders will be rebuilt and upgraded in conjunction with the Blount Station rebuild. New and reconfigured feeders related to substation improvements (Pheasant Branch, Wingra, Tokay, Southeast Fitchburg, Martinsville, and West Cross Plains) will also increase reliability.

The proposed feeder projects planned during the next ten years are shown in Table B.

Distribution Substations

Table A

Item	Project	2003	2004	2005	2006	2007	2008	2009	2010	2011
1	Miscellaneous Distribution Substation Equipment	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
2	Miscellaneous Distribution Substation Improvements					XXX	XXX	XXX	XXX	XXX
3	WGA: Add 69/14 kV Trfmr #2 and Switchgr	XXX								
4	Tokay: New Substation, 69/14 kV	XXX	XXX							
5	BLT: Rebuild 4 kV & 14 kV Substation	XXX	XXX	XXX						
6	Southeast Fitchburg: New Substation, 138/14 kV		XXX	XXX						
7	Martinsville: New Substation, 138/14 kV			XXX						
8	West Cross Plains: New Substation, 69/14 kV			XXX						
9	FEM: Replace Transformers & Add Switchgr				XXX					
10	RYS: Replace Breakers & Capacitors - Metal-clad			XXX	XXX					
11	RKN: Install 69/4 Units & Fdrs, Remove Mendota				XXX					
12	ECA: Add 69/14 kV Trfmr #3 and Switchgr				XXX	XXX				
13	SPR: Add 69/14 kV Trfmr #2				XXX	XXX				
14	Hanson Road: New Substation, 138/14 kV					XXX	XXX			
15	South NSP: New Substation					XXX	XXX			
16	WMD: Replace Trfmr #7 & Add Switchgr						XXX	XXX		
17	BLK: Add 69/14 kV Trfmr #2							XXX		
18	FCH: Add 69/14 kV Trfmr #3							XXX		
19	Tokay: Add 69/14 kV Trfmr #2								XXX	
20	WPT: New Substation									XXX
21	Future Distribution Substation							XXX	XXX	XXX
22	Unit Substation Replacement	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
23	Breaker Replacement	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
24	SOC Recloser Control	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
25	Install LTC Oil Filtering Equipment	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
26	Miscellaneous 69-kV Radial Line Projects	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
27	Capacitor Bank Additions in Substations		XXX		XXX		XXX		XXX	
28	Substation Battery Replacement	XXX		XXX		XXX		XXX		XXX
29	Substation Berms	XXX		XXX		XXX		XXX		XXX
30	Substation HVAC Upgrades		XXX		XXX		XXX		XXX	

Distribution Feeders **Table B**

Item	Project	2003	2004	2005	2006	2007	2008	2009	2010	2011
1	System Improvements from PSC 113	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
2	Distribution Automation		XXX	XXX	XXX	XXX	XXX	XXX	XXX	
3	DLM: Distribution Communication Equipment		XXX	XXX	XXX	XXX	XXX	XXX	XXX	
4	Distribution Feeder Capacitors	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
5	OH-UG Conversion: Mdsn, Mddltn, Monona, Shwd	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
6	4-to-14 Conversion: Arboretum	XXX								
7	4-to-14 Conversion: Glenway	XXX								
8	4-to-14 Conversion: Kipp South	XXX								
9	4-to-14 Conversion: Olin Ave	XXX								
10	4-to-14 Conversion: Johnson Area	XXX	XXX	XXX						
11	4-to-14 Conversion: Blount 4-kV radial	XXX	XXX	XXX						
12	4-to-14 Conversion: Yahara	XXX	XXX	XXX						
13	4-to-14 Conversion: Freeport		XXX							
14	4-to-14 Conversion: Green Substation		XXX							
15	4-to-14 Conversion: Lakeview North		XXX							
16	4-to-14 Conversion: Mineral Point		XXX							
17	4-to-14 Conversion: Nichols Area		XXX							
18	4-to-14 Conversion: South Madison		XXX							
19	4-to-14 Conversion: Future Years			XXX	XXX	XXX	XXX	XXX	XXX	XXX
20	4-kV Feeder Improvements	XXX	XXX	XXX	XXX					
21	Distribution UG Cable Replacements	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
22	NSP 1309 & NSP 1311: Reconductor	XXX								
23	PHB: New Feeder to Elmwood	XXX								
24	SYC 1334: Reconductor Anderson Road		XXX							
25	WGA 1315 & WGA 1320: Reconductor	XXX								
26	WMD 1333: Reconductor Evergreen	XXX								
27	PHB to Deming: New Feeder	XXX								
28	WTN 1316: Reconductor	XXX								
29	SYC-ETN 69KV: Cable Replacements	XXX								
30	West Campus Cogen: Relocate UG Lines	XXX								
31	WMD: Feeder Extended – Airport Rd to Middleton	XXX								
32	Along USH 12: Relocate 10 miles (St Improvement)	XXX	XXX	XXX						
33	FCH 1317: Reconductor	XXX								
34	NSP 1320: Reconductor		XXX							
35	PHB: New Feeder to Relieve PHB 1321		XXX							
36	Stoughton Road Feeder		XXX							
37	RKN 1333 & RKN 1334: Reconductor		XXX	XXX						
38	CSP-WCP: Reconductor			XXX						
39	HKP: New Feeder			XXX						
40	Along Femrite Dr: Relocate Line (St Improvement)			XXX						
41	WLT 1321 & WLT 1322			XXX						
42	WMD: New Feeder to Marriott Area			XXX						
43	BLK: New Feeder - Old Sauk Rd to University Ave				XXX					
44	WPT: Rebuild & Double Circuit						XXX			
45	BLK: New Feeder to Pheasant Branch Area							XXX		
46	Miscellaneous Feeder Reinforcements			XXX	XXX	XXX	XXX	XXX	XXX	XXX
47	Fdr Getaway/Cutover for New Substations or Trfmrs	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX

PSC 113.0604 (3)(a) - Miles of Distribution Line Rebuilt

This table shows the number of miles of distribution line rebuilt in 2002. This total includes conversion from overhead to underground distribution, voltage conversions from 4,160- to 13,800-volt distribution, cable replacement, or overhead relocations.

Two-phase distribution rebuilt is calculated as two single-phase lines.

Overhead		Underground	
Single Phase	**Three Phase**	**Single Phase**	**Three Phase**
4.4	3.8	7.2	15.9

PSC 113.0604 (3)(b) - Miles of Line in Service by Voltage Level

These totals represent the number of circuit miles of distribution circuit in place at the end of 2002. The distribution system is constantly changing so these numbers might be slightly different from the numbers reported in our annual report.

	OH Footage	OH Miles	UG Footage	UG Miles
4.1 kV	1572050	297.7	447023	84.7
13.8 kV	3534329	669.4	4072752	771.4
		967.1		856.0

PSC 113.0604 (3)(c) - Speed of Answer in Seconds

	Gas Leak	Emergency/ Outage	Billing
January	15	56	29
February	16	48	25
March	13	12	25
April	13	15	29
May	16	20	27
June	17	21	29
July	16	31	29
August	22	33	26
September	32	47	36
October	13	23	26
November	15	17	18
December	13	32	17

PSC 113.0604 (3)(d) - Service Time

MGE encourages our customers to contact MGE very early in the process of building or remodeling. As a result, MGE often works with a customer for a long time before their new service is installed. To track our effectiveness, we measure the time between the customer's requested service date and the date MGE energizes the service. It is our intention and belief that working with the customer cooperatively as construction on their facility progresses, we can assure the highest customer satisfaction.

The table below provides the average number of days between the customer-requested date (Date Needed) to the date the new service is energized for residential, commercial, and multifamily projects.

Monthly Electric Service Orders From Date Service Needed to Date Energized

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Residential - 2000												
No. of Days	-9	-7	-13	-7	-8	-6	-6	-9	4	-15	-11	-6
No. of Orders	27	34	46	58	59	42	49	66	54	67	58	51
Residential - 2001												
No. of Days	-19	-20	-37	-10	-12	-10	-6	-7	-9	-7	-11	-10
No. of Orders	40	32	38	50	50	68	45	86	55	64	65	55
Residential - 2002												
No. of Days	4	-10	-4	-2	-1	-3	-2	-2	-4	-15	-9	-6
No. of Orders	63	31	53	73	81	69	64	73	81	70	70	64
Residential - 2003												
No. of Days	-4	-3										
No. of Orders	53	43										
Residential - 2004												
No. of Days												
No. of Orders												
Residential - 2005												
No. of Days												
No. of Orders												
Commercial - 2000												
No. of Days	-1	-3	15	0	4	2	-2	-3	1	0	4	-24
No. of Orders	7	20	19	6	13	20	24	21	15	19	28	20
Commercial - 2001												
No. of Days	10	-2	15	-2	14	0	3	0	7	0	0	5
No. of Orders	35	12	16	15	20	18	15	14	20	20	15	17
Commercial - 2002												
No. of Days	6	-5	-2	-2	-15	-6	-1	-5	-4	-3	-2	-10
No. of Orders	13	6	10	9	11	10	22	19	14	16	16	33
Commercial - 2003												
No. of Days	-3	-5										
No. of Orders	18	5										
Commercial - 2004												
No. of Days												
No. of Orders												
Commercial - 2005												
No. of Days												
No. of Orders												
Multi Unit - 2000												
No. of Days	32	7	-74	-29	12	38	-6	-4	0	0	32	22
No. of Orders	2	2	2	6	2	1	5	7	0	0	3	6
Multi Unit - 2001												
No. of Days	-5	0	-40	-3	-8	-13	0	1	88	-10	8	1
No. of Orders	2	0	1	2	3	3	0	4	1	7	3	8
Multi Unit - 2002												
No. of Days	-8	-2	1	2	-7	-1	-10	-1	0	-8	0	-4
No. of Orders	5	2	1	3	4	3	3	4	0	5	3	3
Multi Unit - 2003												
No. of Days	0	10										
No. of Orders	3	1										
Multi Unit - 2004												
No. of Days												
No. of Orders												
Multi Unit - 2005												
No. of Days												
No. of Orders												

PSC 113.0604 (3)(e) - Total Complaints

The following table shows the total written and telephone complaints by category and month for 2002.

PSC COMPLAINTS FOR 2002												
	Jan.	**Feb.**	**Mar.**	**Apr.**	**May**	**June**	**July**	**Aug.**	**Sep.**	**Oct.**	**Nov.**	**Dec.**
High Bill Investigations/ Complaints - Electric	126	164	99	86	79	45	140	204	186	202	94	40
High Bill Investigations/ Complaints - Gas	91	126	31	35	24	17	27	15	8	13	27	51
High Bill Investigations/ Complaints - Both	32	32	11	14	8	13	6	35	5	12	6	24
Payment Arrangements				2	3				3	1		
Late Payment Charges - Gas and Electric	8	8	4	6	9	4	4	4	6	10	9	6
Disconnection of Service	1		2	4	15	7	7	2	9	2	1	
Quality/Timeliness of Job or Service								1		1		
Rates/Electric Surcharge												
Miscellaneous	1	5	4	10	2	10	3	2	4			2
Safety												
Outages												
Power Quality												
Property Damage	1											

PSC 113.0604 (3)(f)

MGE's tree trimming budget and actual expenditures for 2002 are as follows:

Category	Description	Budget	Actual
Job Orders	Tree trimming in advance of construction	$ 0	$ 41,532
632-2360	Routine maintenance	1,046,903	1,561,583
632-2359	Miscellaneous	142,335	$115,490
Total		**$1,189,238**	**$1,676,773**

PSC 113.0604 (3)(g) - Total Annual Projected/Actual Circuit Miles of Distribution Line Trees Trimmed

Miles of Trimming Planned 115
Miles of Trimming Completed 154.5